REMARKS

Status of the Claims

Claims 1 and 11 to 24 are presently in the application, with claims 1, 23 and 24 being independent.

Claim 6 has been canceled and its limitation respecting liquid phase alkylation conditions has been incorporated into claim 1.

Claim 18 has been amended to delete the requirement of MCM-56 in the alkylation catalyst while new claim 21 is added to require the presence of MCM-56 in the alkylation catalyst.

Claim 19 has been amended to include more specific liquid phase alkylation conditions, support for which can be found in the specification at page 9, lines 13 to 22.

Claim 20 has been amended to provide additional alkylation conditions, support for which is found at page 9, lines 25 to 30.

New claim 22 is analogous to claim 20 but is dependent on claim 21 rather than claim 18.

New claim 23 is added to claim the invention in terms of a phosphorus-containing catalyst that has higher activity than its non-phosphorus analogue. Similarly, new claim 24 is added to claim the invention in terms of a phosphorus-containing catalyst that has higher selectivity for monoalkylated product than its non-phosphorus analogue. Support for these claims is found in the specification at the paragraph bridging pages 9 and 10.

Applicants respectfully request entry of this Amendment and reconsideration of this application, as amended.

Patentability of the Claims

The presently amended claims are patentable over the earlier cited U.S. Patent No. 5,536,894 to Degnan et al. (Degnan) in view of U.S. Patent No. 5,557,024 to Cheng et al. (Cheng). Degnan provides no mention of phosphorus in the context of aromatics alkylation, much less in the context of *liquid phase* aromatics alkylation. Moreover, although the paragraph comprising lines 7-11 of column 14 of Degnan does not *explicitly* state that benefits of phosphorus addition including attrition resistance, stability, metals passivation and coke make reduction are only for the cracking reaction, these benefits are clearly associated with a cracking catalyst and not an alkylation catalyst. Although the Examiner has earlier responded that these beneficial characteristics are based upon physical properties common to *all* catalysts, including *alkylation* catalysts, one skilled in the art would not expect such benefits which overcome problems associated with severe *cracking* conditions to be of any moment under the mild conditions associated with alkylation, particularly the liquid phase alkylation conditions now required by all the claims. Accordingly, Degnan would provide no incentive to the routineer at the time the present invention was made to add phosphorus to catalysts used in liquid phase alkylation.

Moreover, the combination of Degnan with Cheng's teaching of MCM-56 for liquid phase alkylation does not make the present invention obvious because this combination does not disclose or suggest the use of phosphorus with catalysts in alkylation processes under alkylation conditions, in any phase, given Degnan's teaching of phosphorus addition in the context of severe cracking conditions. There is no indication in Degnan that phosphorus would be beneficial to the use of MCM-22 type materials in aromatics alkylation in either the liquid or gas phase. Likewise, there is no

disclosure in Cheng that phosphorus would be beneficial to the use of such materials in aromatics alkylation in either the liquid or gas phase. The combination of Degnan and Cheng fails to disclose or suggest to one skilled in the art liquid phase alkylation using a catalyst comprising phosphorus and the crystalline porous material as required by the present claims.

In addition, with regard to the new claims 23 and 24, neither Degnan nor Cheng disclose or suggest that the addition of phosphorus to MCM-56 should enhance its activity or its selectivity to monoalkylated species when employed in liquid phase aromatics alkylation.

CONCLUSION

Applicants respectfully submit that in view of the foregoing amendments and arguments, the presently amended claims describe a new, useful and unobvious process for alkylating aromatics with alkylation agents, which meet the requirements for patentability. Accordingly, allowance of the presently claims is earnestly solicited.

Respectfully submitted,

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